

**PROCESSING SYSTEM AND METHOD INCLUDING A DEDICATED  
COLLECTIVE OFFLOAD ENGINE PROVIDING COLLECTIVE PROCESSING  
IN A DISTRIBUTED COMPUTING ENVIRONMENT**

**Abstract of the Disclosure**

A dedicated collective offload engine provides collective processing of data from processing nodes in a distributed computing environment. The dedicated collective offload engine and the processing nodes are coupled to a switch fabric. A result is produced by the collective offload engine based on the collective processing of the data, and is forwarded to at least one processing node. Collective processing is facilitated by communication among a plurality of dedicated collective offload engines via the switch fabric or via a private channel disposed between the collective offload engines.